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RYAN, MASON & LEWIS, LLP
1300 POST ROAD, SUITE 205
FAIRFIELD, CT 06824

EXAMINER

RHODE JR, ROBERT E

ART UNIT	PAPER NUMBER
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3625

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 19

Application Number: 09/654,202
Filing Date: Sept. 11, 2000
Appellant(s): COFINO ET AL.

Robert J. Mauri

For Appellant

EXAMINER'S ANSWER

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection, contained in the brief is correct. It is noted, however that appellant incorporated an amendment contemporaneously. The amendment amended the dependency of claim 17 from depending from claim 15, to depending from claim 16. Further, such amendment has been entered.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The grouping of the claims in the brief is correct.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,175,838 B1	Papierniak et al	1-2001
6,223,215 B1	Hunt et al	4-2001
6,477,538 B2	Yaginuma et al	11-2002

US 5,546,516 is included as result of being incorporated in US 6,477,538 B2.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims: This rejection is set forth in Final Office Action, Paper No. 10.

(11) Response to Argument

The appellant arguments are related to Issue 1 and Issue 2. In that regard, the arguments and the response to these arguments are broken out separately under each Issue.

Issue 1

Appellant remarks at page 4 of the brief state regarding independent claims 1, 18 and 20 that "neither Yaginuma nor Papierniak teach any of these *shopping steps* or suggest anything that implies or could be construed to be these *shopping steps*" such as "product impressions" or "click-throughs". In addition, the Appellant argues that there are no teachings or suggestions in Yaginuma or in Papierniak for tabulating or visualizing "shopping steps nor any teachings or suggestions of generating *tables* having shopping steps or visualization of shopping steps".

First, Papierniak was the reference that fairly suggests and teaches one of ordinary skill in the art that the Appellant's "shopping steps" including "clickthrough" and "purchase" are fully disclosed. For example, Papierniak teaches that it is important to gain information on a site visitors navigation through a site and what products were viewed as well as active steps recorded (i.e. "shopping steps") - such as ordering goods (i.e. "purchase") [Abstract and Col 1, lines 13 – 49]. Papierniak further teaches that the activation of the ordering of selected goods, which is an example of a "get request"; will call the appropriate HTML page to be displayed to place an order (i.e. purchase) – as

Art Unit: 3625

well as the server recording the "get request" (Col 4, lines 44 – 58). An example is the order button at an online shopping site. The order button when "clicked", initiates a "get request" for the appropriate HTML page, which includes the necessary information for an online shopper to order. Moreover, Papierniak discloses and teaches that these active shopping steps such as "clicking the link" (i.e. clickthrough) can include the step to view a product as well as order a good or product (Col 4, lines 52 – 53). Papierniak teaches also that the server records "clicking on the link" (i.e. order or product viewed) and the server also records this web page access (i.e. shopping step of order) in the server log for each shoppers shopping session (i.e. sessionization process) [Col 4, lines 44 – 58 and Col 6, lines 16 – 31].

With regard to the word "table", the Appellant does not provide a specific definition of a "table". However, the Appellant in their specification at page 8, lines 11 - 12 provides some more detail and specifically that the data is collected and stored in a "table". While Papierniak does not specifically use the word "table", the reference does cite "records" for each shopper's session in which the data is stored (Col 3, lines 13 – 20 and Col 4, lines 41 – 54). The definition of a "record" in the "The Computer Desktop Encyclopedia" copyrighted in 1996 is "a group of related fields that store data about activity (transaction record)" [see Appendix A]. Therefore, this would fairly suggest and teach one of ordinary skill in the art that the transaction record (i.e. table) stored by Papierniak is the shoppers online session, which has recorded/stored all "get request" such as "clicking on a link" associated with each shoppers session (Col 4, lines 41 – 59 and Col 6, lines 16 – 31). In that regard, the "record" of Papierniak is equivalent to the

Art Unit: 3625

appellant's "table" in terms of the stored data. Thereby, it would have been obvious to one of ordinary skill in the art that a record, which consists of stored data in the Web log(s), is equivalent to a "table". Of note, these shopping sessions consist of recorded data as disclosed, claimed and argued are in the form of non-functional descriptive material (MPEP 2106). Moreover, non-functional descriptive material is given little patentable weight. In that regard, the shopping steps as taught by Papierniak are recorded for each session and thereby is recorded/stored data, which is considered to be non-functional descriptive material. This stored data in online methods and systems with specifics such as a kind/type of recorded data (i.e. shopping steps) are given little patentable weight. The word(s) or phrase(s) are given little patentable weight because the claim language limitation is considered to be non-functional descriptive material, which does not patentably distinguish the applicant's invention from Papierniak. Thereby, the non-fictional descriptive material is directed only to the content of the data (i.e. shopping steps - which is stored data) and does not affect either the structure or method/process of Papierniak, which leaves the method and system unchanged. Thus, Papierniak discloses and teaches one of ordinary skill "a computer system and method for providing one or more visualizations to one or more users, the system comprising; provides one or more network central processing units (CPU), one or more memories, and one or more network interfaces (Figure 1); a sessionization process that receives one or more web server logs from one or more online stores, and generates one session table for each session found from requests recorded in Web server logs" (see at least Abstract and Col 3, lines 1 – 22 and Figures 1 and 3).

Second, Yaginuma discloses extracting the stored data from the web log session disclosed by Papierniak via a data mining process (i.e. "shopping step"/data finder process) and displays the result of the data mining process as multi-dimensional data in a graphical format (Abstract, Col 1, lines 11 – 65 and Figures 1 – 6, 14, 19 and 32). Moreover and while the Appellant acts as their own lexicographer for a data mining and display methods and systems including "shopping step finder process" and "micro-conversion", these phrases and words have a definite meaning that are well understood and are disclosed to one of ordinary skill in the art by Yaginuma. For example, a "shopping step finder process" as defined by the Appellant at page 9, lines 16 – 18 of their specification is "In general, the shopping step process determines if there is a request that matches one of the axes of the parallel coordinate system and what value of the independent variable to be plotted on the respective axis". In that regard, Yaginuma teaches one of ordinary skill that a request that matches one of the parallel data axes (i.e. fields) [Figures 5 and 6] in the parallel coordinate system (Abstract, Col 4, lines 62 – 67, Col 6, lines 17 - 34 and Figures 1 - 6) is plotted as an independent variable on the axes (Col 5, lines 43 – 67 and Col 6, lines 1 – 76 and Figures 1 – 6). Furthermore and as noted above, the "shopping steps" are considered stored data and thereby the method and system of Yaginuma discloses a "data finder process" and that "the data finder process determines if there is a request that matches one of the axes of the parallel coordinate system and if there is a request that matches one of the axes of the parallel coordinate system and what value of the independent variable to be plotted

on the respective axis" (Abstract, Col 4, lines 62 – 67, Col 5, line 1, Col 6, lines 17 – 34 and Figures 1 – 6 and 8).

With regard to "micro-conversion", the Appellant in the their specification defines at page 15, lines 1 – 12 that a "micro-conversion means a shopper moving to a next shopping step for a product". Thereby, once the shoppers moves to a next step (i.e. data point), the shopper clicks on, for example the order button, which is stored in a record (i.e. table) of Papierniak. In turn, Yaginuma teaches further that a micro-conversion table is generated (Figure 5) from the recorded and stored data, which is a result of the data mining process. The data is then displayed to the user in a more meaningful format (Figure 6). Therefore, Yaginuam teaches a method and system that extracts, sorts and correlates the correct target data disclosed by Papierniak for each shopping step in a session, which is stored data into the correct field (i.e. axis) with corresponding variable data. Furthermore, Yaginuma teaches that the micro-conversion table (Figure 5) is then displayed (Figure 6) for a user such as business management in order to provide more meaningful understanding of the data and too Yaginuma can display as many or as few (polygon) results as required by the user. As a result, Yaginuam teaches - "a data finder process that receives one or more session tables, and generates one micro-conversion table for each given session table, each micro-conversion table comprising one or more shopping steps (see at least Abstract, Col 4, lines 45 – 57 and Figures 4 – 6); and a visualization process that receives one or more micro-conversion tables, and generates one or more micro-conversion visualizations of one or more micro-conversions shopping steps from one or more of the micro-

conversion tables" (see at least Abstract, Col 5, lines 15 – 19 and Col 6, lines 17 - 34 and Figures 1 – 6 and 8).

Appellant remarks at page 5 of the brief state that there is no motivation to combine the references of Papierniak and Yaginuma other than the sole suggestion by the Examiner to modify the references.

In response to Appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the references do suggest and teach a motivation to combine or in the knowledge generally available to one of ordinary skill in the art. The references disclose methods and systems requirements for improving display and visualization of data such as shopping steps, for use by as well as being more meaningful for business management and business operations users (see at least Papierniak – Col 1, lines 14 – 29 and Col 3, lines 1- 2 and Yaginuma – Col 1, lines 16 – 27 and Col 12, lines 31 – 36). Thereby, one of ordinary skill in the art would have been motivated to combine the method and system of Papierniak with the method and system of Yaginuma to have enabled a method and system, which extracts shopping step data from a database and displays the data

Art Unit: 3625

the data regarding online shopper's steps in a more meaningful manner for management. With this understanding, management is able to understand an online customer's needs and or bottle necks at the their site in order to improve the ease of shopping. As importantly, these problems are recognized and corrected more rapidly. Thereby, these improvements would have increased online customer satisfaction, which will increase the probability that online customers' will both return for additional shopping as well as recommend the site to others to fulfill their shopping needs.

Appellant remarks at page 6 of the brief state that Hunt regarding claims 5 – 7, 12 and 18 has no indication in the text of “shopping steps” or of a “shopping step-finder process” and that Hunt contains no teachings with respect to “micro-conversion tables having shopping steps extracted from the session tracking data”.

First, “micro-conversion tables having shopping steps extracted from the session tracking data” was not the wording in these claims. Second, as noted above, the combination of Papierniak and Yaginuma fully address these limitations regarding “shopping steps finder process” and “micro-conversion tables” as well as “shopping steps”. Third, Hunt clearly teaches one of ordinary skill in the art that the reference is focused on online shopping, which includes “shopping steps” such as purchase (Abstract, Col 1, lines 36 - 52 and Figures 2 – 10).

Appellant remarks at page 7 of the brief state that there is no motivation to combine Hunt with the combination of Papierniak and Yaginuma.

In response to Appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case and as taught by

and as taught by the combination of Papierniak and Yaginuma, business management needs to understand how to conduct business more effectively online as with off line stores by capturing, storing and associating each online shoppers actions to and for example placing an order (Papierniak Col 1, lines 8 - 44) and to visually display (Yaginuma Abstract). With this data (i.e. shopping steps) captured and recorded by Papierniak for each shoppers session, it will provide business management with the information they will need to effectively understand their online shoppers problems (Col 1, lines 14 – 49) and when combined with Yaginuma to display through a visualization process – in order to more fully understand the stored data (Figures 1 – 6). Thereby, the combination of Papierniak and Yaginuma would teach one of ordinary skill in the art that extracting shopping step data from a database and displaying the data regarding online shoppers steps in order to provide more meaningful information for management. In turn, Hunt teaches a method and system to track an online shoppers origin – through sales (Col 1, lines 37 – 55) and therefore more effectively allocate advertisement investments (Col 1, lines 55 – 60). In this regard, one of ordinary skill in the art would have been motivated to extend the combination of Papierniak and Yaginuma to have provided a method and system to track an online shoppers origin – through sales, which would have provided more effective allocation of advertisement investments. In this manner, the site operator can understand the origin of the online visitor, which will provide business management with specific information on the source of the visitors. Thus, management will more fully understand where they need to invest advertising dollars.

Appellant remarks at page 7 that since claim 1 is now patentable based on their arguments and therefore claims 2 – 4, 8, 9, 13, 15 and 16, which are dependant from claim 1 are patentable too.

Appellant has not independently argued the separate patentability of these claims. Accordingly, the mere allegation that such claims are patentable is not persuasive.

Appellant remarks at page 8 of the brief regarding claim 10 state that Yaginuma does not disclose “polygon lines” nor “one or more drop outs of polygonal lines”.

While Yaginuma does not specifically disclose displaying polygon lines, the reference does teach one of ordinary skill in the art regarding “polygon lines” (Figure 32). Moreover, Yaginuma refers to and incorporates by reference US Patent 5,546,516, which specifically discloses and teaches “polygon lines” (see at least Abstract). Moreover, Yaginuma is not limited to a specific data-mining engine and data mining is a technology for extracting useful information for business purposes, which provides the capability for deriving trends, patterns and correlations from collected/recorded data (Col 1, lines 28 – 43). Further and as taught by Papierniak, the online shoppers various steps (i.e. sequential events) are recorded and stored as data for future business analysis including visual displays (Abstract, Col 1, lines 40 – 44, Col 4, lines 41 – 58 and Figures 1 and 6). Moreover, Papierniak teaches one of ordinary skill in the art that a shopping session would include terminating at or before another step (i.e.

purchase/order) during the online shopping process. For example, the online shopper terminating the session before the purchase. In that regard and at that step/point of termination, there would not be further data collected or recorded by Papierniak for this shopper's session. Thereby, Yaginuam would not have any recorded/stored data in order to employ a datamining engine for deriving correlations (i.e. data finder process) and therefore would *not* be able to continue the "polygon line(s)". This is because there is no data to plot on the next axis of Yaginuam - since the shopper has terminated their session and therefore the "polygon line" would "drop out". Furthermore, Yaginuam does teach one of ordinary skill in the art that the polygon lines – do "drop out" (Figure 33 and particularly the line with 0.20 below).

Appellant remarks at page 8 and regarding claim 11 of the brief state that there cannot be found in any of the references "an assignment of *sequential events to parallel lines in a parallel coordinate system*".

First, Yaginuam does disclose that sequential events can be recorded and stored (Col 1, lines 16 – 23). In this regard and in combination with Papierniak which discloses recorded shopping steps (i.e. stored data), it would have taught one of ordinary skill in the art that Yaginuam can and does include sequential events. Moreover as disclosed above, the shopping steps are recorded and stored as data. In that regard, the method and system of Yaginuam treats these "sequential events" as data – regardless whether it is sequential or not and then correlates and displays. Second and with regard to "parallel lines in a parallel coordinate system", Yaginuam teaches creating a map with

data and coordinates on the coordinate axis for each field/parallel coordinate (see at least Col 6, lines 57 – 58 and Figure 6). Furthermore, Yaginuma refers to and incorporates by reference US Patent 5,546,516, which specifically discloses and teaches regarding “parallel lines in a parallel coordinate system” (see at least Abstract).

Appellant remarks at page 8 of the brief regarding claim 14, argues that “where the dropout of a polygonal line is disappearance of a polygonal line before the line reaches the last parallel axis in a parallel a parallel coordinate system with the parallel axes of sequential events”.

The Appellant states that arguments given with respect to claim 10 are equally valid here. In that regard, the responses provided by the Examiner to the arguments to claim 10 are also valid here (see above).

Issue 2

Appellant remarks at page 9 of the brief regarding claim 12 that none of the figures of Yaginuma reviewed “contain an assignment of sequential events to parallel lines in a parallel coordinate system” and that there is no “sequential events being one or more shopping steps”.

First, the Examiner’s response to claim 11 (see above) fully addresses “sequential events”. Second and regarding the phrase “sequential events being one or more shopping steps” was given little patentable weight during examination. For example, the phrase “sequential events” was given little patentable weight because it

was but one of many possible kinds/types of "sequential events" such as shopping steps that could be captured and stored as data by Papierniak (Abstract, Col 1, lines 40 – 44, Col 4, lines 41 – 58 and Figures 1 and 6) and sequential events are further disclosed by Yaginuma (Col 1, lines 21 – 22). Moreover and as noted above, "shopping steps" were considered non-functional descriptive material and were treated as recorded and stored data. Therefore, Yaginuma teaches one of ordinary skill in the art does "contain an assignment of sequential events (i.e. data) to parallel lines in a parallel coordinate system".

Appellant remarks at page 9 of the brief regarding claim 18 that Yaginuma does not disclose "that clicking on a polygonal line (i.e. hyperlink) opens a Web page delivering detailed information of the session" and that "class" disclosed in Yaginuma does not equate to a session.

First, hyperlink as defined in "Microsoft Computer Dictionary"; Fifth Edition is "a connection between an element in a hypertext document, such as a word, a phrase, a symbol or an image and different element in the document, another document, a file, or script. The user activates the link by clicking on the linked element" (see Appendix B). In that regard and while Yaginuma does disclose polygon lines, the reference does not specifically disclose hyperlinks. In that regard and as taught by Papierniak, the information regarding a session can be obtained by clicking on a link (i.e. hyperlink) and that these files can be displayed relative to the shoppers session (Col 4, lines 50 – 54).

Art Unit: 3625

Moreover, Yaginuma does disclose clicking on desired points, which then provides the desired information to the user (Col 7, line 28 and Figure 6). As a result, the Yaginuma reference in combination with Papierniak would have fairly suggested and taught one of ordinary skill in the art that "that clicking on a polygonal line (i.e. hyperlink)" opens a Web page delivering detailed information of the session.

Appellant did not address any arguments with respect to the provisional Double Patenting Rejection. Therefore, the provisional Double Patenting rejection is maintained.

For the above reasons, it is believed that the rejections should be sustained.


Application/Control Number: 09/654,202
Art Unit: 3625

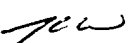
Page 18

Respectfully submitted,

RER
May 13, 2004

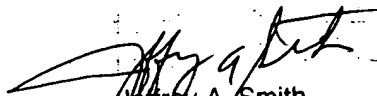
Conferees
Robert E. Rhode Jr.
Examiner
Art Unit 3625


Jeffrey A. Smith
Primary Examiner
Art Unit 3625

 5-13-04
John Weiss
SPE
Art Unit 3621
Appeal Conference Specialist
TC 3600

Ryan, Mason & Lewis
1300 Post Road, Suite 205
Fairfield, CT. 06430

RER


Jeffrey A. Smith
Primary Examiner

Art Unit 3621
Appeal Conference Specialist
TC 3600

Ryan, Mason & Lewis
1300 Post Road, Suite 205
Fairfield, CT. 06430

Application/Control Number: 09/654,202

Page 19

Art Unit: 3625

Appendix A

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record

record

(1) A group of related fields that store data about a subject (master record) or activity (transaction record). A collection of records make up a file. Master records contain permanent data, such as account number, and variable data, such as balance due. Transaction records contain only permanent data, such as quantity and product code. See *master file* and *transaction file* for examples of record contents.

(2) In certain disk organization methods, a record is a block of data read and written at one time without any relationship to records in a file.

record format

Same as *record layout*.

record head

A device that writes a signal on tape. Some tape drives and all disk drives use a combination read/write head.

record layout

The format of a data record, which includes the name, type and size of each field in the record.

Name	Address	City	State	ZIP
Conrad, James R.	809 Garibaldi Lane	Benton Falls	TN	37255-0265

record locking

See *file and record locking*.

record mark

A symbol used to identify the end of a record.

record number

The sequential number assigned to each physical record in a file. Record numbers change when the file is sorted or records are added and deleted.

records management

The creation, retention and scheduled destruction of an organization's paper and film documents. Computer-generated reports and documents fall into the records management domain, but traditional data processing files do not.

recovery

See *backup & recovery, checkpoint/restart* and *tape backup*.

rectifier

An electrical circuit that converts AC into DC current with the use of diodes that act as one-way valves. Contrast with *inverter*.

recursion

In programming, the ability of a subroutine or program module to call itself. It is helpful for writing routines that solve problems by repeatedly processing the output of the same process.

recycle bin

In Windows 95, an icon of a waste can used for deleting files. The icon of a file or



Application/Control Number: 09/654,202

Page 20

Art Unit: 3625

Appendix B

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Scotland, it offers such features as WAIS search capability. *See also* HTTP server, WAIS.

HTTP server *n.* 1. Server software that uses HTTP to serve up HTML documents and any associated files and scripts when requested by a client, such as a Web browser. The connection between client and server is usually broken after the requested document or file has been served. HTTP servers are used on Web and Intranet sites. *Also called:* Web server. *See also* HTML, HTTP, server (definition 2). *Compare* application server. 2. Any machine on which an HTTP server program is running.

HTTP status codes *n.* Three-digit codes sent by an HTTP server that indicate the results of a request for data. Codes beginning with 1 respond to requests that the client may not have finished sending; with 2, successful requests; with 3, further action that the client must take; with 4, requests that failed because of client error; and with 5, requests that failed because of server error. *See also* 400, 401, 402, 403, 404, HTTP.

HTTP streaming *n.* The process of downloading streaming digital media using an HTTP server (a standard Internet server) rather than a server designed specifically to transmit streaming media. HTTP streaming downloads the media file onto a computer, which plays the downloaded file as it becomes available. *See also* real-time streaming.

hub *n.* In a network, a device joining communication lines at a central location, providing a common connection to all devices on the network. The term is an analogy to the hub of a wheel. *See also* active hub, switching hub.

hue *n.* In the HSB color model, one of the three characteristics used to describe a color. Hue is the attribute that most readily distinguishes one color from other colors. It depends on the frequency of a light wave in the visible spectrum. *See also* color model, HSB. *Compare* brightness, saturation (definition 2).

Huffman coding *n.* A method of compressing a given set of data based on the relative frequency of the individual elements. The more often a given element, such as a letter, occurs, the shorter, in bits, is its corresponding code. It was one of the earliest data compression codes and, with modifications, remains one of the most widely used codes for a large variety of message types.

human engineering *n.* The designing of machines and associated products to suit the needs of humans. *See also* ergonomics.

human-machine interface *n.* The boundary at which people make contact with and use machines; when applied to programs and operating systems, it is more widely known as the user interface.

hung *adj.* *See* hang.

hybrid circuit *n.* A circuit in which fundamentally different types of components are used to perform similar functions, such as a stereo amplifier that uses both tubes and transistors.

hybrid computer *n.* A computer that contains both digital and analog circuits.

hybrid microcircuit *n.* A microelectronic circuit that combines individual microminiaturized components and integrated components.

hybrid network *n.* A network constructed of different topologies, such as ring and star. *See also* bus network, ring network, star network, Token-Ring network, topology.

Hybris virus *n.* A slow-spreading but persistent self-updating Internet worm first detected in late 2000. The Hybris virus is activated whenever an infected computer is connected to the Internet. It attaches itself to all outgoing e-mail messages, maintains a list of all e-mail addresses in the headers of incoming e-mail messages, and sends copies of itself to all e-mail addresses on the list. Hybris is difficult to eradicate because it updates itself regularly, accessing and downloading updates and plug-ins from anonymous postings to the alt.comp.virus newsgroup. Hybris incorporates downloaded extensions into its code, and it e-mails its modified form to additional potential victims. Hybris often includes a spiral plug-in which produces a spinning disk on top of any active windows on a user's screen.

HyperCard *n.* An information-management software tool, designed for the Apple Macintosh, that implements many hypertext concepts. A HyperCard document consists of a series of cards, collected into a stack. Each card can contain text, graphical images, sound, buttons that enable travel from card to card, and other controls. Programs and routines can be coded as scripts in an object-oriented language called HyperTalk or developed as external code resources (XCMDs and XFCNs). *See also* hypertext, object-oriented programming, XCMD, XFCN.

hyperlink *n.* A connection between an element in a hypertext document, such as a word, a phrase, a symbol, or an image, and a different element in the document, another

document, a file, or a screen. Clicking on the linked element or in a color difference to indicate that the element is a hypertext document, such as SGML, is generally not visible to the user. *See also* hypertext link, link. *See also* hypermedia, hypertext.

hypermedia *n.* The combination of text, images, sound, hyperlinks, and other media. A typical of Web documents is a modern extension of hypertext documents of the form that attempts to offer a world that parallels human thinking. It can make associations sequentially from one document to another. For example, a hypermedia document might include links to physics, satellites, and real-time.

hyperspace *n.* The space accessed by following a link. *Compare* cyberspace.

HyperTalk *n.* A programming language for HyperCard stacks. *See also* HyperCard.

hypertext *n.* Text in which a sequential web of associations is created through related topics. The word *iron*, traveling from user to the periodic table, migration of metals, and so on. *See also* hypertext was coined by a computer scientist as opposed to speech. The term is nearly synonymous with document, such as an animation. *See also* HyperCard.

Hyper Text Configuration Protocol *n.* HTTP.

hypertext link *n.* A connection between an element in a hypertext document, such as a word, a phrase, a symbol, or an image, and a different element in the document, another

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document, a file, or a script. The user activates the link by clicking on the linked element, which is usually underlined or in a color different from the rest of the document to indicate that the element is linked. Hyperlinks are indicated in a hypertext document through tags in markup languages such as SGML and HTML. These tags are generally not visible to the user. *Also called:* hot link, hypertext link, link. *See also* anchor (definition 2), HTML, hypermedia, hypertext, URL.

hypermedia *n.* The combination of text, video, graphic images, sound, hyperlinks, and other elements in the form typical of Web documents. Essentially, hypermedia is the modern extension of hypertext, the hyperlinked, text-based documents of the original Internet. Hypermedia attempts to offer a working and learning environment that parallels human thinking—that is, one in which the user can make associations between topics, rather than move sequentially from one to the next, as in an alphabetic list. For example, a hypermedia presentation on navigation might include links to astronomy, bird migration, geography, satellites, and radar. *See also* hypertext.

hyperspace *n.* The set of all documents that can be accessed by following hyperlinks in the World Wide Web. *Compare* cyberspace (definition 2), Gopherspace.

HyperTalk *n.* A programming language used to manipulate HyperCard stacks developed by Apple Computer, Inc. *See also* HyperCard.

hypertext *n.* Text linked together in a complex, nonsequential web of associations in which the user can browse through related topics. For example, in an article with the word *iron*, traveling among the links to *iron* might lead the user to the periodic table of the elements or a map of the migration of metallurgy in Iron Age Europe. The term *hypertext* was coined in 1965 to describe documents presented by a computer that express the nonlinear structure of ideas as opposed to the linear format of books, film, and speech. The term *hypermedia*, more recently introduced, is nearly synonymous but emphasizes the nontextual element, such as animation, recorded sound, and video. *See also* HyperCard, hypermedia.

Hyper Text Coffee Pot Control Protocol *n.* *See* HTCP.

hypertext link *n.* *See* hyperlink.

Hypertext Markup Language *n.* *See* HTML.

Hypertext Transfer Protocol *n.* *See* HTTP.

Hypertext Transfer Protocol Daemon *n.* *See* HTTPd.

Hypertext Transfer Protocol Next Generation *n.* *See* HTTP-NG.

HyperWave *n.* A World Wide Web server that specializes in database manipulation and multimedia.

hyphen *n.* A punctuation mark (-) used to break a word between syllables at the end of a line or to separate the parts of a compound word. Word processing programs with sophisticated hyphenation capabilities recognize three types of hyphens: normal, optional, and nonbreaking. Normal hyphens, also called *required* or *hard hyphens*, are part of a word's spelling and are always visible, as in *long-term*. Optional hyphens, also called *discretionary* or *soft hyphens*, appear only when a word is broken between syllables at the end of a line; they are usually supplied by the word processing program itself. Nonbreaking hyphens are always visible, like normal hyphens, but they do not allow a line break. *See also* hyphenation program.

hyphenation program *n.* A program (often included as part of a word processing application) that introduces optional hyphens at line breaks. A good hyphenation program will avoid ending more than three lines in a row with hyphens and will prompt the user for confirmation or tag ambiguous breaks, as in the word *desert* (did the army de-sert in the des-ert?). *See also* hyphen.

hysteresis *n.* The tendency of a system, a device, or a circuit to behave differently depending on the direction of change of an input parameter. For example, a household thermostat might turn on at 68 degrees when the house is cooling down, but turn off at 72 degrees when the house is warming up. Hysteresis is important in many devices, especially those employing magnetic fields, such as transformers and read/write heads.

HYTELNET *n.* A menu-driven index of Internet resources that are accessible via telnet, including library catalogs, databases and bibliographies, bulletin boards, and network information services. HYTELNET can operate through a client program on a computer connected to the Internet, or through the World Wide Web.

HyTime *n.* Acronym for **Hypermedia/Time-based Structuring Language**. A markup language standard that describes links within and between documents and hypermedia objects. The standard defines structures and some semantic features, enabling description of traversal and presentation information of objects.

Hz *n.* *See* hertz.

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